

Work Order ID 124200-2

September-11-14 11:58:22 AM

Split-2

FOR DSI 9711

124200

Page 1

Item ID: D3488-041

Revision ID:

Accept

N9000040100

Item Name: Blade Fitting LH

Setup Start *NS1*

Start Date: 9/10/14 Start Qty: 8.00 ^{1.0}

Stop *NS2*

Required Date: 9/10/14 Req'd Qty: 8.00

8

Cust Item ID:

Reference:

8

Customer:

Approvals:

Process Plan: MJS

Date: 14-09-12 Tooling:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3488

Rev B

DSK101

REV D

100

100

Doosan

DOOSAN LATHE

0.00

DAS

40

9-89

Doosan Lathe

Memo

0.00

1-Turn as per Dwg DSK 101 & Folio FA625

14/10/14

8

1

DAS

25

9-89

2-Deburr

110

110

QC

QC2- Inspect parts off machine FAI/FAIB

0.00

DAS

40

9-89

Quality Control

Memo

0.00

14/10/14

8

0

DAS

25

9-89

PTO →

Work Order ID 124200

September-11-14 11:58:22 AM

124200

Page 2

Item ID: D3488-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Blade Fitting LH

Stop *NS2*

Start Date: 9/10/14 Start Qty: 8.00

8

Cust Item ID:

Required Date: 9/10/14 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

0.00

0.00

1-Machine as per Folio FA625 & Dwg D34882-Debur

P 4/11/04

81

0

*J.C. L. 10/11/10
JTC 2011-03*

130

130

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

P 4/11/04

81

0

*J.C. L. 10/11/10
14/11/10*

140

140

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.00

0.00

1

0

*DAS
37
9-89 14-11-10*

(see attached email)

PTO →

Work Order ID 124200

September-11-14 11:58:22 AM

124200

Page 3

Item ID: D3488-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Blade Fitting-LH

Stop *NS2*

Start Date: 9/10/14 Start Qty: 8.00

8

Cust Item ID:

Required Date: 9/10/14 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Chemical Conversion Coat per QSI005 4.1	0.00							
150									
HandFinish	Memo	0.00							
Hand Finishing									
160	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
160									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 11:40 OVEN TEMPERATURE: 320 FINISH TIME: 12:10								
170	QC3- Inspect Part Finish	0.00							
170									
QC	Memo	0.00							
Quality Control									

1 φ 14-11-13. DAS 34 9-89

1 φ 14-11-13. DAS 34 9-89

1 φ 14-11-13. DAS 15 9-89

Work Order ID 124200

September-11-14 11:58:22 AM

124200

Page 4

Item ID: D3488-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Blade Fitting LH

Stop *NS2*

Start Date: 9/10/14 Start Qty: 8.00

8

Cust Item ID:

Required Date: 9/10/14 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

180

Hand Finish

Hand Finishing

0.00

Memo

0.00

Hand Finishing

Install Inserts as per Dwg D3488

1611 f ed whel

190

190

QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

1 DAS 38 9-89

NOV 13 2014

200

200

Packaging

Identify as per dwg & Stock Location

0.00

Ship

Memo

0.00

Packaging

1 3-89

NOV 13 2014

Work Order ID 124200

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124200

Page 5

Item ID: D3488-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Blade Fitting LH
 Start Date: 9/10/14 Start Qty: 8.00 *8* Cust Item ID:
 Required Date: 9/10/14 Req'd Qty: 8.00 *8* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.00							
Quality Control									

MCS 14-11-14

mf 14-11-14

Picklist Print

September-11-14 11:58:22 AM

Page 1

Work Order ID: 124200

124200

Parent Item: D3488-041

D3488-041

Parent Item Name: Blade Fitting LH

Start Date: 9/10/14

Required Date: 9/10/14

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev:A New Issue 06-02-28 JLM
IPP Rev:B As per Rev B 06-03-30 JLM
IPP Rev:C Now On Doosan Lathe JLM Verified BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

ALS7-1032-225	AELS8-1032-225	Purchased	No				Each	544.0000		32	4		
---------------	----------------	-----------	----	--	--	--	------	----------	--	----	---	--	--

AI S7-1032-225

Insert

**

all value 13

Location

Loc Qty

Loc Code

FG

80

118520

80

1130565

24

FP001

391

m128649

391

ST280

73

m128179

73

D6103-003

Manufactured No

Each

32.0000

8

D6103-003

Round Billet, Aluminum

**

14-10-1

Location

Loc Qty

Loc Code

MAT043

32

113646

12

122543

20

124222

8

* Bushing
M7075 T3 R 1.000

m128649

(Not pulled off the system)

0.500'

JC-L / M-a
14/11/10

DART AEROSPACE LTD		Work Order:	124200
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
Ø2.150	+/-0.005	2.151	✓		VERN	PHD-12
Ø2.780	+/-0.005	2.779	✓		MIC	PHD-04
Ø3.125	+/-0.010	3.122	✓		VERN	PHD-12
Ø3.346	+/-0.010	3.345	✓		VERN	SL-10
0.125 x 45°	+/-0.010 x +/-0.1°	.125	✓		"	PHD-12
8.000	+0.030/-0.000	8.014	✓		H G	31006
9.250	+/-0.010	9.251	✓		"	"
0.188	+/-0.010	.188	✓		"	"
R0.032	+/-0.010	.032	✓		Rad G	
R0.062	+/-0.010	.062	✓		"	
Ø0.297	+0.005/-0.001	.300	✓		PIN G	
Ø0.430	+/-0.010	Ø.432	✓		PIN G	
0.100	+/-0.010	.098	✓		VERN	PHD-12
0.125	+/-0.010	.130	✓		"	"
2.620	+/-0.010	2.619	✓		"	"
3.500	+/-0.010	3.500	✓		"	"
1.005	+/-0.010	1.005	✓		H G	31006
Ø0.484	+0.005/-0.001	.485	✓		PIN G	
1.180	+/-0.010	1.180	✓		VERN	PHD-12
3.150	+/-0.010	3.150	✓		"	"
3.070	+/-0.010	3.070	✓		"	"
R0.063	+/-0.010	.063	✓		Rad G	

DART AEROSPACE LTD		Work Order:	124200
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 2 of 2	

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Milling Section						
Ø0.508	+0.006/-0.001	.508	✓		Cage Rim	
0.750	+/-0.010	.749	✓		Height gage	
1.500	+/-0.010	1.497	✓		↓	
11.18	+/-0.030	11.170	✓		↓	
R0.062	+/-0.010	.062	✓		Radi gage	
0.125	+/-0.010	.120	✓		Vern HP-01	
0.590	+/-0.010	.586	✓		Height gage	
0.793	+/-0.010	.795	✓		↓	
1.351	+/-0.010	1.351	✓		↓	
1.317	+/-0.010	1.317	✓		↓	
1.802	+/-0.010	1.804	✓		↓	
Ø0.496	+0.006 -0.001	0.496	✓		Caliper	JCL-08

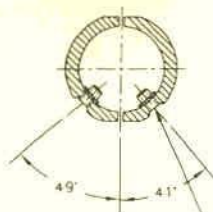
Measured by: SL 40 9-89	Audited by: DAS 37 9-89	Prototype Approval:	N/A
Date: 14/10/14	Date: 14-11-11	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.03.31	New Issue	KJ/JLM	
B	08.09.19	Reformat P/O D3488-041	KJ/JLM	
C	08.12.02	Dimension 8.000 removed	KJ/JLM	

J.C.-L/B.2

14/11/10

7855-
752

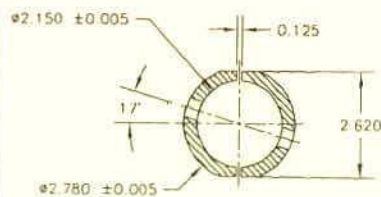


SECTION B-B

Ø0.297
C'BORE Ø0.430 x 0.100
INSTALL ALS4-1032-225 (OR AKS4-1032-225
OR ALS7-1032-225 OR AKS7-1032-225)
INSERTS AFTER FINISH
(4 PLACES)



124200 M.C.S
14-09-12



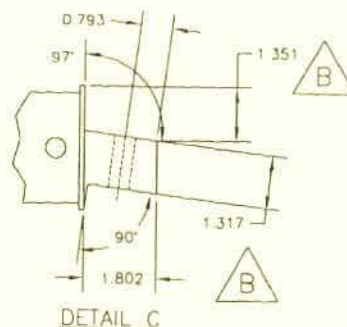
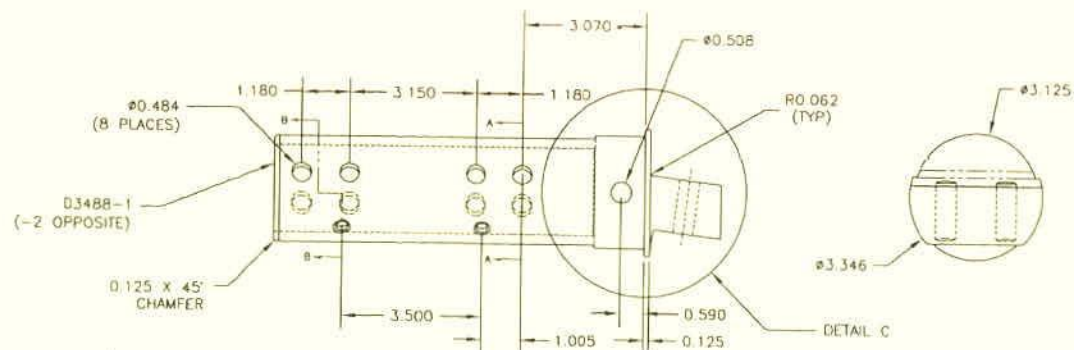
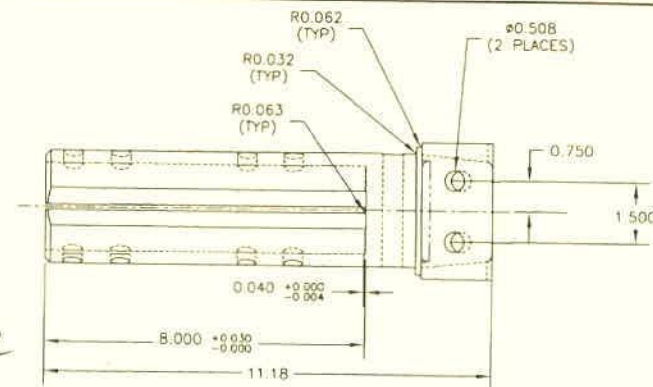
SECTION A-A

D3488-041/-042 BLADE FITTING ASSEMBLY PARTS LIST

QTY -041	QTY -042	PART NUMBER	DESCRIPTION
X		D3488-041	BLADE FITTING ASSEMBLY (LH)
	X	D3488-042	BLADE FITTING ASSEMBLY (RH)
1		D3488-1	BLADE FITTING (LH)
	1	D3488-2	BLADE FITTING (RH)
4	4	ALS4-1032-225 OR AKS4-1032-225 OR ALS7-1032-225 OR AKS7-1032-225	INSERT

D3488-041/-042 BLADE FITTING

- MATERIAL: MAKE D3488-1/-2 FROM ALUMINUM 7075-T7351 ROUND BAR PER QQ-A-225/9 (REF. DART MATERIAL SPEC M7075T73R)
- FINISH: ACID ETCH, ALQDINE PER DART QSI 005 4.1. POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- BREAK UNMARKED SHARP EDGES 0.010 TO 0.020
- INSTALL INSERTS AFTER POWDER COAT
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



DETAIL C

D3488-041 SHOWN (D3488-042 OPPOSITE)

RELEASED
G.C.S. J. PH
P.C. O.S.
E.C.N. #731

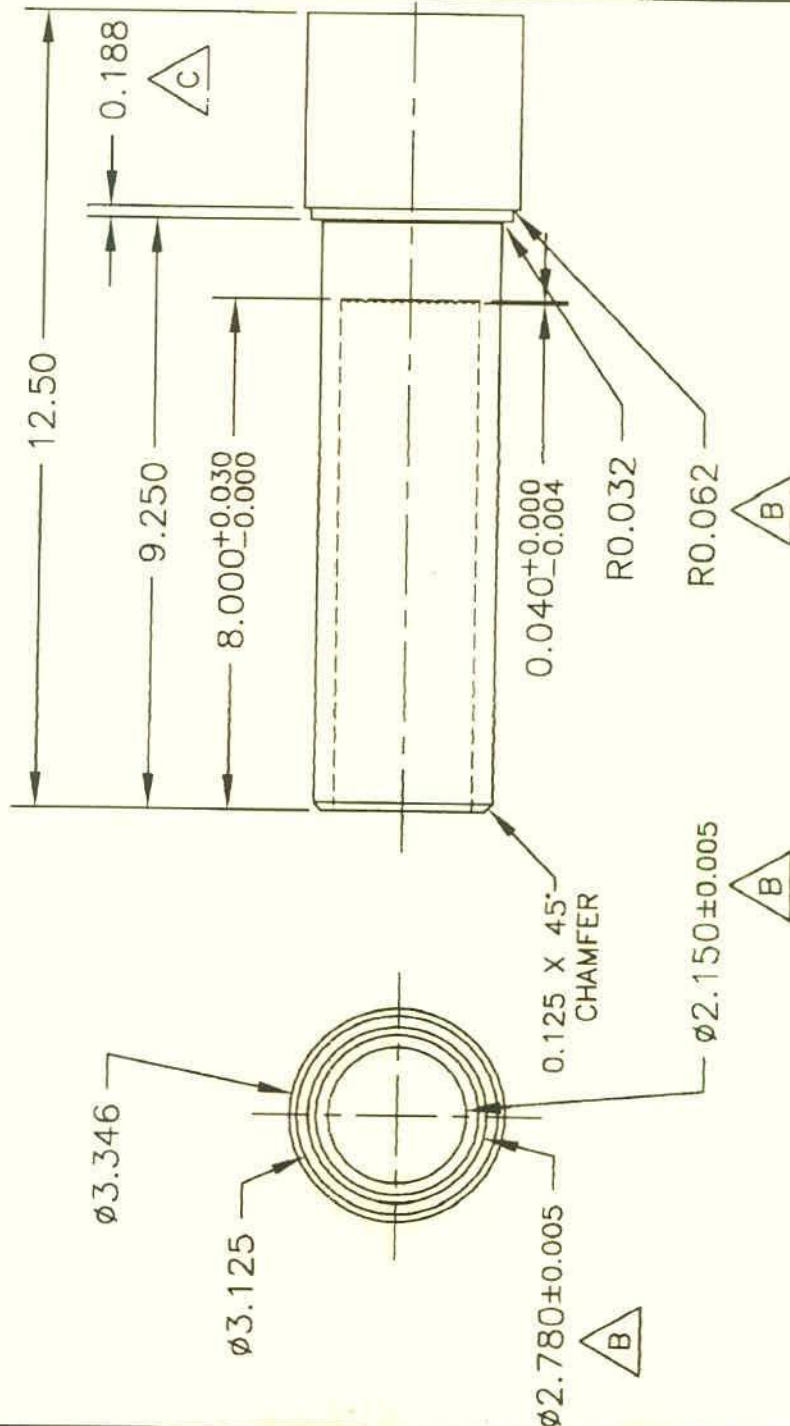
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B	06.03.15	CHANGE THICKNESS
A	05.12.20	NEW ISSUE
DESIGN	PH	DRAWN BY PH
CHECKED	4	APPROVED 4
DATE	06.03.15	TITLE
		BLADE FITTING
		DART AEROSPACE USA, INC. PORT HADLOCK, MA
		DRAWING NO. D3488
		REV B
		SHEET 1 OF 1
		SCALE 1:3



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. DSK 101	REV. D SHEET 1 OF 1
DATE 06.05.09		TITLE D3488-1/-2 TURNING DETAIL	SCALE 1:3
A	05.12.21	NEW ISSUE	
B	06.03.02	ADD TOLERANCES AND RADIUS	
C	06.04.17	0.188 WAS 0.125	
D	06.05.09	REMOVE DIAMETER FOR CHAMFER	



- DSK 101
- 1) MATERIAL: MAKE FROM ALUMINUM 7075-T7351 ROUND BAR PER QQ-A-225/9 (REF. DART MATERIAL SPEC M7075T73R)
- 2) FINISH: NONE
- 3) BREAK UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D350-636 REV. J AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D350-636 REV. 3
REF FAA STC: SR00646SE
REF TCCA STC: SH99-7
REF EASA STC: EASA.10033942
REF BRAZIL STC: 2009S05-01

1.0 Purpose

It has come to DART's attention that the fit between the 12 mm Bolt required to fasten the aft most float mounting bracket of the Aerazur Floatation System to the existing provisions in the DART Skid tubes may be too loose. In such cases, it is acceptable for the installer or maintainer to proceed with the following steps:

2.0 Blade Fitting Rework

- 2.1 Locate Ø0.508in (12.9mm) hole in the D3488-041/-042 Blade Fittings and enlarge to Ø0.610in (15.5mm), then ream to Ø0.626in +0.001in/-0.000in (15.5mm +0.15/-0) as shown in Figure 1 of this Service Instruction.
- 2.2 Deburr and touch up finish in accordance with Chapter 5 of ICA-D350-636.

3.0 Bushing Fabrication

- 3.1 Fabricate qty(1) bushing for each Blade Fitting Assembly in accordance with Figure 2 of this Service Instruction and to the following material specifications: 7075-T73 (or 7075-T7351/T73510/T73511) round bar per AMS-QQ-A-200/11 or AMS-QQ-A-225/9.
- 3.2 Ensure the bushings can be installed into the holes that have been reworked on the D3488-041/-042 Blade Fitting Assemblies: the edges of the bushing should not protrude from the surface of the D3488-041/-042 Blade Fitting Assemblies. Adjust length of bushings to clear as required.

4.0 Installation

- 4.1 Bond bushings to the D3488-041/-042 Blade Fitting Assemblies using Proseal 890 Class B or AMS-S-8802 Class B sealant or 3M DP460 Scotch-Weld Epoxy Adhesive in accordance with the manufacturer's instructions. Ensure the inside of the bushings are free from sealant or adhesive. Refer to Figure 3 of this Service Instruction.
- 4.2 Allow sealant or adhesive to cure in accordance with the manufacturer's instructions.
- 4.3 Install the reworked D3488-041/-042 Blade Fitting Assemblies in accordance with Chapter 3.5 of IIN-D350-636 or Chapter 32.4 of ICA-D350-636.

5.0 Weight and Balance

There is a negligible weight change associated with this modification.

A	NEW ISSUE	MB	14.10.20
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO. REV. A	
MFG. APPR.		DSI 9711 SHEET 1 OF 2	
APPROVED		TITLE SCALE	
DE APPR.	BLADE FITTING REWORK NTS		
DATE	14.10.20		

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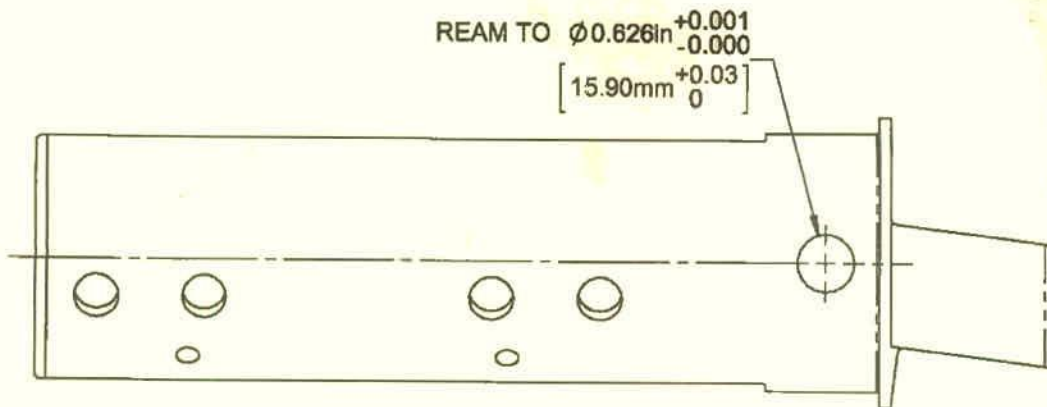


FIGURE 1: Blade Fitting Assembly Rework

(D3488-042 Shown, D3488-041 Similar)

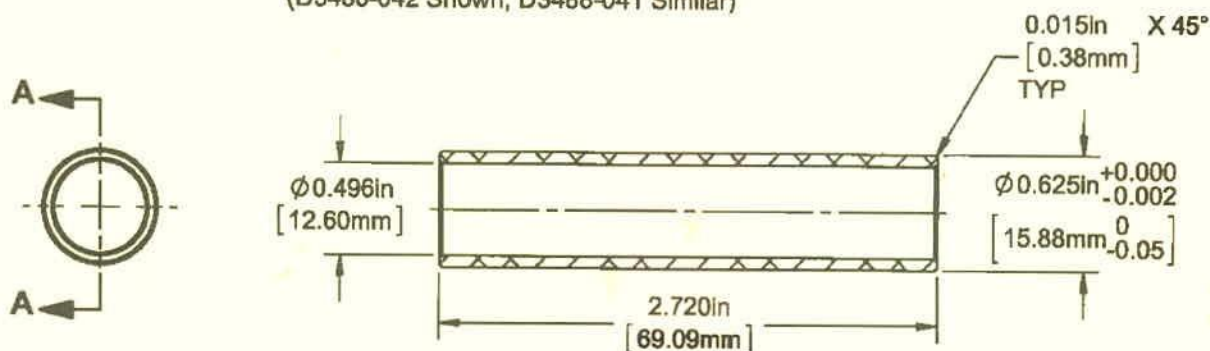


FIGURE 2: Bushing Detail

SECTION A-A

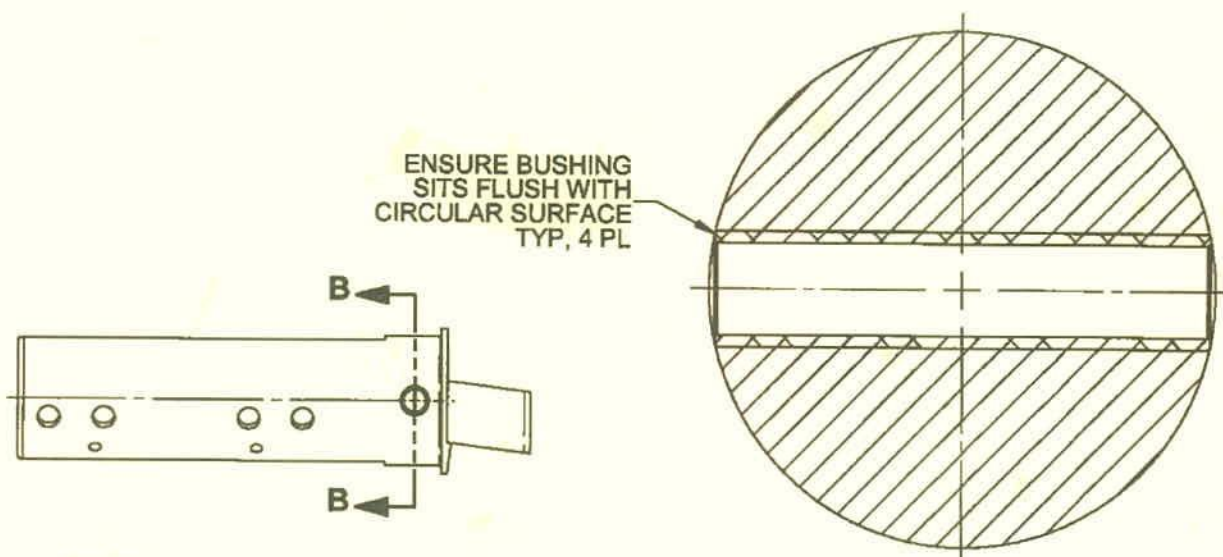


FIGURE 3: Assembly Detail

SECTION B-B
SCALE 4X

DESIGN	<i>LL</i>	DART AEROSPACE USA, INC.	
DRAWN	<i>SS</i>	KENT, WA	
CHECKED	<i>SS</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>N/A</i>	DSI 9711	SHEET 2 OF 2
APPROVED	<i>MD</i>	TITLE	SCALE
DE APPR.	<i>MD</i>	BLADE FITTING REWORK	NTS
DATE	14.10.20	COPYRIGHT © 2014 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

Marc Bellavance

From: David Shepherd
Sent: November-11-14 4:11 PM
To: Marc Bellavance
Cc: Jean-Luc Menard
Subject: RE: Info

Marc,

I think the small interference fit is ok.

Regards,
David

From: Marc Bellavance
Sent: November-11-14 1:46 PM
To: David Shepherd
Cc: Jean-Luc Menard
Subject: RE: Info
Importance: High

David,

Guillaume came to see me re this rework scheme on the blade fitting and he tells me that the bushings were press fitted with a 0.0005" interference.

Your email below states not to press fit the bushing however, considering the small interference, would this be acceptable to you or not?

Please advise.

Thanks,
Marc

From: David Shepherd
Sent: October-17-14 12:55 PM
To: Marc Bellavance
Cc: Jean-Luc Menard
Subject: RE: Info

Marc,

I am OK with a tight fit on the bushing, not a press fit. I think we should write up a DSI that allows the operator to open up the hole and install a bushing. The DSI should call up the material and dimensions for the bushing so that we don't need to create a drawing for this. We are doing the work on behalf of the operator.

Regards,
David